

Work Order ID 109083

November-11-13 12:37:22 PM

D 4 8 5 4 - 7

B 1 0 9 0 8 3

\*109083\*

Page 1

Item ID: D4854-7

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Lower Bracket (Replaces P/N G13013-10)

Start Date: 11/11/13 Start Qty: 24.00

\*24\*

Cust Item ID:

Required Date: 11/25/13 Req'd Qty: 24.00

\*24\*

Customer:

Reference:

Approvals: Process Plan: MCS Date: 13-11-11 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr | DAS  |
|----------|--------------|------|
| D4854    | A U/P        | 10   |
|          |              | 9-89 |

100

0.00

\*100\*

Waterjet

Memo

0.00

FLOW CNC Waterjet

CUT AS PER FILE

DWG REV: APROG REV: P

DEBURR

105

QC2- Inspect parts off machine FAI/FAIB

0.00

\*105\*

QC

Memo

0.00

Quality Control

PTO

24 0 Jm 13-11-14

24 0 Jm 13-11-14

DQA:

Date: 14/01/29



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 14/1/29

Work Order update only ☐

|                            |   |  |   |  |                                      |
|----------------------------|---|--|---|--|--------------------------------------|
| Work Order: <u>109083</u>  | <b>DISPOSITION</b><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input checked="" type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b>      |   |  |                                      |
| Part No. <u>P4854-7</u>    |   | Skid-tube <input type="checkbox"/>     | Crosstube <input type="checkbox"/>            | Water Jet <input type="checkbox"/>           | Engineering <input type="checkbox"/> |
| NCR No. <u>NCR 14-3463</u> |   | Machining <input type="checkbox"/>     | Small Fab <input checked="" type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/>   | Quality <input type="checkbox"/>     |
|                            |   | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/>            | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>       |
|                            |   | Large Fab <input type="checkbox"/>     | Composite <input type="checkbox"/>            | Supplier <input type="checkbox"/>            |                                      |

| Root Cause    | Date     | Step | Qty | Description of work order update or non-conformance   | Initial Chief Eng            | Action Description   | Sign & Date    | Verification                 | QC Inspector                 |
|---------------|----------|------|-----|---|------------------------------|--|----------------|------------------------------|------------------------------|
| Design        | 14.01.28 | 105  | 24  | PARTS ON ONE SIDE IS WITHIN TO @ 0.265 BUT OUTSIDE TOL @ 0.275 ON OTHER SIDE.<br>L.C. PROCESS (WATER JET) | 27<br>220<br>100<br>14.01.08 | ACCEPTABLE DEVIATION PER ATTACHED EMAIL.<br><br>OPEN PAR TO REVISE DATA:<br><del>0.260 ± 0.015</del><br><del>0.260 ± 0.005</del> | AC<br>14.01.21 | DAS<br>27<br>9-89<br>14/1/21 | DAS<br>27<br>9-89<br>14/1/21 |
| Doc/Data      |          |      |     |   |                              |  |                |                              |                              |
| Equip/Tooling |          |      |     |   |                              |  |                |                              |                              |
| Handling/Pre  |          |      |     |   |                              |  |                |                              |                              |
| Material      |          |      |     |   |                              |  |                |                              |                              |
| Operator      |          |      |     |   |                              |  |                |                              |                              |
| Offset/Setup  |          |      |     |   |                              |  |                |                              |                              |
| Process       |          |      |     |   |                              |  |                |                              |                              |
| Supplier      |          |      |     |   |                              |  |                |                              |                              |
| Training      |          |      |     |   |                              |  |                |                              |                              |
| Transport     |          |      |     |   |                              |  |                |                              |                              |
| Unapproved    |          |      |     |   |                              |  |                |                              |                              |

## FAULT CATEGORY

| Landing Gear                                      | General                                       |  |  |
|---|---|--|--|
| <input type="checkbox"/> Bending                  | <input type="checkbox"/> Bend                 | <input type="checkbox"/> Folio/Program                     | <input type="checkbox"/> Outside Dimensions              |
| <input type="checkbox"/> Centre Not Concentric    | <input type="checkbox"/> BOM/Route            | <input type="checkbox"/> Grain                             | <input checked="" type="checkbox"/> Over/Under tolerance |
| <input type="checkbox"/> Cracks                   | <input type="checkbox"/> Broken/Damage/Defect | <input type="checkbox"/> Hardware                          | <input type="checkbox"/> Part Incorrect                  |
| <input type="checkbox"/> Crimp/Kink/Ripple/Wave   | <input type="checkbox"/> Burrs                | <input type="checkbox"/> Inspection Incomplete/Unqualified | <input type="checkbox"/> Part Lost/Missing               |
| <input type="checkbox"/> Cuffs                    | <input type="checkbox"/> Contamination        | <input type="checkbox"/> Instructions Incomplete/Unclear   | <input type="checkbox"/> Part Moved                      |
| <input type="checkbox"/> Crushing                 | <input type="checkbox"/> Countersink          | <input type="checkbox"/> Misaligned/off center             | <input type="checkbox"/> Positioned Wrong                |
| <input type="checkbox"/> Heat Treat               | <input type="checkbox"/> Cut Too Short        | <input type="checkbox"/> Mislabeled                        | <input type="checkbox"/> Power Loss/Surge                |
| <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Drawing              | <input type="checkbox"/> Misread                           | <input type="checkbox"/> Pressure/Forced                 |
| <input type="checkbox"/> Marks/Chatter            | <input type="checkbox"/> Drill Holes          | <input type="checkbox"/> Off-set                           | <input type="checkbox"/> Set-up                          |
| <input type="checkbox"/> Turning Sequence         | <input type="checkbox"/> Finish               | <input type="checkbox"/> Out of Calibration                | <input type="checkbox"/> Temperature/Cure                |
| <input type="checkbox"/> Wave/Twist in Tube       | <input type="checkbox"/> Fit/Function         | <input type="checkbox"/> Out of Sequence                   | <input type="checkbox"/> Weld                            |
|   |   |  | <input type="checkbox"/> Wrong Stock Pulled              |
|   |   |  | <input type="checkbox"/> Other                           |

November-11-13 12:37:22 PM

Page 2

## Quality Control

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**QA Closed: MM Date: 14/11/27Work Order update only ☐

|  |   |   |                                      |                                    |                                    |                                      |   |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|---|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|---|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: <u>109083</u><br>Part No. <u>D4854-7</u><br>NCR No. <u>14-3443</u> | <b>DISPOSITION</b><br>Rework <input type="checkbox"/><br>Scrap <input checked="" type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input checked="" type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input checked="" type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/>  | Water Jet <input type="checkbox"/>  | Engineering <input type="checkbox"/> |                                    |                                    |                                      |   |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input checked="" type="checkbox"/>                                  | Small Fab <input type="checkbox"/>  | Prod. Eng. Coord. <input type="checkbox"/>  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |   |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>   | Finishing <input type="checkbox"/>  | Rec/Store/Packaging <input type="checkbox"/>  | Other <input type="checkbox"/>       |                                    |                                    |                                      |   |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>   | Composite <input type="checkbox"/>  | Supplier <input type="checkbox"/>   |                                      |                                    |                                    |                                      |   |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| Root Cause    |   | Date                             | Step | Qty | Description of work order update or non-conformance   | Initial Chief Eng  | Action Description   | Sign & Date                    | Verification                | QC Inspector                |
|---------------|---|----------------------------------|------|-----|---|--|--|--------------------------------|-----------------------------|-----------------------------|
| Design        |   | 18/11/13<br><br><br><br>05/12/13 | 110  | 1   | Tooling marks in .257" hole.<br><br>Rc. set water jet / process.<br><br>Height short by .05"<br><br>Rc. operator error<br><br><br>QTY (2) | DAS 27 9-89<br><br>13/12/06<br><br>S<br><br>14/12/28<br>052012 | Part was not held properly.<br><br>SCRAP<br><br><br>Part got placed in a box with similar parts and mixed shankers<br><br>SCRAP<br><br>QTY (2) | BG<br>18/11/13<br><br>05/12/13 | DAS 27 9-89<br><br>12/12/16 | DAS 27 9-89<br><br>13/12/16 |
| Doc/Data      |   |                                  |      |     |   |  |  |                                |                             |                             |
| Equip/Tooling |   |                                  |      |     |   |  |  |                                |                             |                             |
| Handling/Pre  |   |                                  |      |     |   |  |  |                                |                             |                             |
| Material      |   |                                  |      |     |   |  |  |                                |                             |                             |
| Operator      | X |                                  |      |     |   |  |  |                                |                             |                             |
| Offset/Setup  |   |                                  |      |     |   |  |  |                                |                             |                             |
| Process       | X |                                  |      |     |   |  |  |                                |                             |                             |
| Supplier      |   |                                  |      |     |   |  |  |                                |                             |                             |
| Training      |   |                                  |      |     |   |  |  |                                |                             |                             |
| Transport     |   |                                  |      |     |   |  |  |                                |                             |                             |
| Unapproved    |   |                                  |      |     |   |  |  |                                |                             |                             |

**FAULT CATEGORY**

|  |  |   |   |
|--|--|---|---|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input checked="" type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><input type="checkbox"/> Pressure/Forced Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |
|--|--|---|---|

# Work Order ID 109083

November-11-13 12:37:22 PM

**\*109083\***

Page 3

Item ID: D4854-7 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Lower Bracket (Replaces P/N G13013-10)  
 Start Date: 11/11/13 Start Qty: 24.00 **\*24\*** Cust Item ID:  
 Required Date: 11/25/13 Req'd Qty: 24.00 **\*24\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                     | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 140                            | Chemical Conversion Coat per QSI005 4.1      | 0.00                 |         |        |              |               |               |                  |                |
| <b>*140*</b>                   |  |                      |         |        |              |               |               |                  |                |
| HandFinish                     | Memo   | 0.00                 |         |        |              |               |               |                  |                |
| Hand Finishing                 |  |                      |         |        |              |               |               |                  |                |
| 150                            | QC7-Inspect Chemical Conversion Coat         | 0.00                 |         |        |              |               |               |                  |                |
| <b>*150*</b>                   |  |                      |         |        |              |               |               |                  |                |
| QC                             | Memo   | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                |  |                      |         |        |              |               |               |                  |                |
| 160                            | White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum | 0.00                 |         |        |              |               |               |                  |                |
| <b>*160*</b>                   |  |                      |         |        |              |               |               |                  |                |
| Powdercoat                     | Memo   | 0.00                 |         |        |              |               |               |                  |                |
| Powder Coating                 |  |                      |         |        |              |               |               |                  |                |

22 76 14-1-20

22 0 14-1-20. DAS 34 9-89

22 0 14-1-21. DAS 34 9-89

START: 10:05  
 OVEN: T: 320°  
 FINISH: 10:35

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|  |  |  |  |  |   |  |
|--|--|--|--|--|---|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td style="width: 33%;">           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </td> <td style="width: 33%;">           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </td> <td style="width: 33%;">           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </td> <td style="width: 33%;">           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </td> </tr> </table> | Skid-tube <input type="checkbox"/><br>Machining <input type="checkbox"/><br>Thermoforming <input type="checkbox"/><br>Large Fab <input type="checkbox"/> | Crosstube <input type="checkbox"/><br>Small Fab <input type="checkbox"/><br>Finishing <input type="checkbox"/><br>Composite <input type="checkbox"/> | Water Jet <input type="checkbox"/><br>Prod. Eng. Coord. <input type="checkbox"/><br>Rec/Store/Packaging <input type="checkbox"/><br>Supplier <input type="checkbox"/> | Engineering <input type="checkbox"/><br>Quality <input type="checkbox"/><br>Other <input type="checkbox"/> |
| Skid-tube <input type="checkbox"/><br>Machining <input type="checkbox"/><br>Thermoforming <input type="checkbox"/><br>Large Fab <input type="checkbox"/> | Crosstube <input type="checkbox"/><br>Small Fab <input type="checkbox"/><br>Finishing <input type="checkbox"/><br>Composite <input type="checkbox"/>                               | Water Jet <input type="checkbox"/><br>Prod. Eng. Coord. <input type="checkbox"/><br>Rec/Store/Packaging <input type="checkbox"/><br>Supplier <input type="checkbox"/>  | Engineering <input type="checkbox"/><br>Quality <input type="checkbox"/><br>Other <input type="checkbox"/>   |  |   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |   |                   |                    |             |              |              |
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Transport     |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

### FAULT CATEGORY

| Landing Gear                                      | General                                       | Other  |
|---|---|--|
| <input type="checkbox"/> Bending                  | <input type="checkbox"/> Bend                 | <input type="checkbox"/> Folio/Program                     |
| <input type="checkbox"/> Centre Not Concentric    | <input type="checkbox"/> BOM/Route            | <input type="checkbox"/> Grain                             |
| <input type="checkbox"/> Cracks                   | <input type="checkbox"/> Broken/Damage/Defect | <input type="checkbox"/> Hardware                          |
| <input type="checkbox"/> Crimp/Kink/Ripple/Wave   | <input type="checkbox"/> Burrs                | <input type="checkbox"/> Inspection Incomplete/Unqualified |
| <input type="checkbox"/> Cuffs                    | <input type="checkbox"/> Contamination        | <input type="checkbox"/> Instructions Incomplete/Unclear   |
| <input type="checkbox"/> Crushing                 | <input type="checkbox"/> Countersink          | <input type="checkbox"/> Misaligned/off center             |
| <input type="checkbox"/> Heat Treat               | <input type="checkbox"/> Cut Too Short        | <input type="checkbox"/> Mislabeled                        |
| <input type="checkbox"/> Inspection Strip in Tube | <input type="checkbox"/> Drawing              | <input type="checkbox"/> Misread                           |
| <input type="checkbox"/> Marks/Chatter            | <input type="checkbox"/> Drill Holes          | <input type="checkbox"/> Off-set                           |
| <input type="checkbox"/> Turning Sequence         | <input type="checkbox"/> Finish               | <input type="checkbox"/> Out of Calibration                |
| <input type="checkbox"/> Wave/Twist in Tube       | <input type="checkbox"/> Fit/Function         | <input type="checkbox"/> Out of Sequence                   |
|   |   | <input type="checkbox"/> Outside Dimensions                |
|   |   | <input type="checkbox"/> Over/Under tolerance              |
|   |   | <input type="checkbox"/> Part Incorrect                    |
|   |   | <input type="checkbox"/> Part Lost/Missing                 |
|   |   | <input type="checkbox"/> Part Moved                        |
|   |   | <input type="checkbox"/> Positioned Wrong                  |
|   |   | <input type="checkbox"/> Power Loss/Surge                  |
|   |   | <input type="checkbox"/> Pressure/Forced                   |
|   |   | <input type="checkbox"/> Set-up                            |
|   |   | <input type="checkbox"/> Temperature/Cure                  |
|   |   | <input type="checkbox"/> Weld                              |
|   |   | <input type="checkbox"/> Wrong Stock Pulled                |
|   |   | <input type="checkbox"/> Other                             |

Work Order ID 109083

\*109083\*

Page 4

November-11-13 12:37:22 PM

Item ID: D4854-7 Accept \*N900040100\* Setup Start \*NS1\*  
Revision ID: Stop \*NS2\*  
Item Name: Lower Bracket (Replaces P/N G13013-10)  
Start Date: 11/11/13 Start Qty: 24.00 \*24\* Cust Item ID:  
Required Date: 11/25/13 Req'd Qty: 24.00 \*24\* Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description                    | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 170                            | QC3- Inspect Part Finish                    | 0.00                 |         |        |              |               |               |                  |                   |
| *170*                          |   |                      |         |        |              | 22X           | 14-1-22       |                  | DAS<br>26<br>9-89 |
| QC                             | Memo  | 0.00                 |         |        |              |               |               |                  |                   |
| Quality Control                |   |                      |         |        |              |               |               |                  |                   |
| 180                            | Identify as per dwg & Stock Location: 81124 | 0.00                 |         |        |              |               |               |                  |                   |
| *180*                          |   |                      |         |        |              | 22X           | 14-1-22       |                  | DAS<br>26<br>9-89 |
| Packaging                      | Memo  | 0.00                 |         |        |              |               |               |                  |                   |
| Packaging                      |   |                      |         |        |              |               |               |                  |                   |
| 190                            | QC21- Final Inspection - Work Order Release | 0.00                 |         |        |              |               |               |                  |                   |
| *190*                          |   |                      |         |        |              |               |               |                  |                   |
| QC                             | Memo  | 0.00                 |         |        |              |               |               |                  |                   |
| Quality Control                |   |                      |         |        |              |               |               |                  |                   |

14-01-22  
14-01-22

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|  |  |   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|--|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>   | Water Jet <input type="checkbox"/>  | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>   | Prod. Eng. Coord. <input type="checkbox"/>  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>   | Rec/Store/Packaging <input type="checkbox"/>  | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>   | Supplier <input type="checkbox"/>   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |   |                   |                    |             |              |              |
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Transport     |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

### FAULT CATEGORY

|  |  |   |
|--|--|---|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence |
|  |  | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge  |
|  |  | <input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other  |



# Picklist Print

Page 1

November-11-13 12:37:27 PM

Work Order ID: 109083

**\*109083\***

Parent Item: D4854-7

**\*D4854-7\***

Parent Item Name: Lower Bracket (Replaces P/N G13013-10)

Start Date: 11/11/13

Required Date: 11/25/13

Start Qty: 24.00

Required Qty: 24.00

Comments: IPP REV:A NEW ISSUE 13-07-22 JLM VERIFIED BY:JFS

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M6061T6B0.750X04.00<br>0        |                        | Purchased     | No          |                     |                  |                 | f                  | 25.5840        |             | <u>11</u>    |               |                |        |

**\*M6061T6B0 750X04 000\***

**\*\***

*Ac 13.11.13*

6061-T6 Bar .750 x 4.00

Location

Loc Qty

Loc Code

MAT049

25.584

124443

2.584

M126075

23

126075 →

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

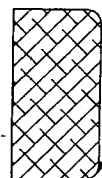
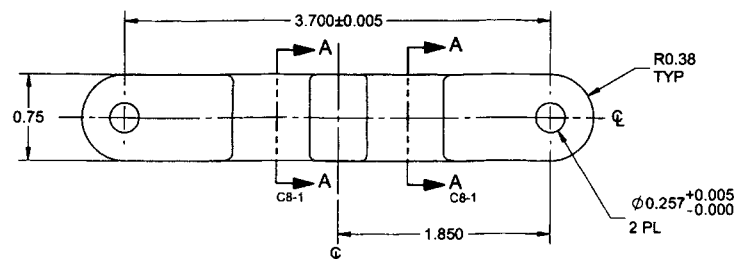
|  |  |   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|--|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>   | Water Jet <input type="checkbox"/>  | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>   | Prod. Eng. Coord. <input type="checkbox"/>  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>   | Rec/Store/Packaging <input type="checkbox"/>  | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>   | Supplier <input type="checkbox"/>   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |   |                   |                    |             |              |              |
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Transport     |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

### FAULT CATEGORY

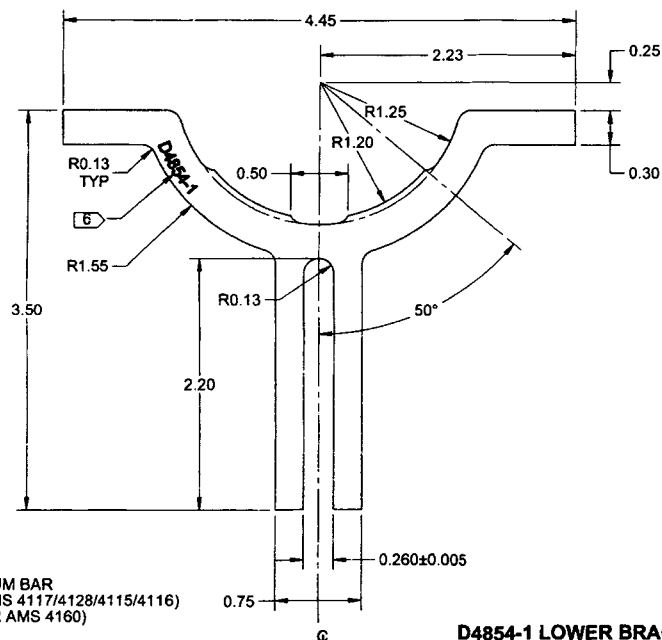
|  |  |   |  |
|--|--|---|--|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |
|--|--|---|--|

## FIRST ARTICLE INSPECTION CHECKLIST

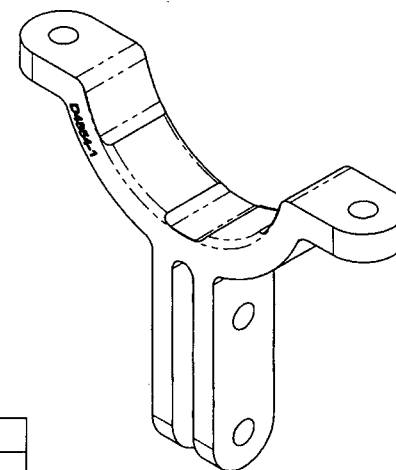
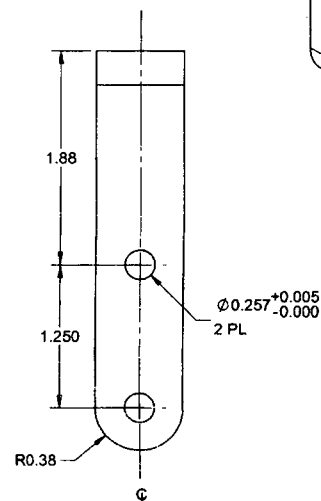


**SECTION A-A**  
**SCALE 2X**  
D5-1

R0.06 MIN - R0.10 MAX  
2 PL



**D4854-1 LOWER BRACKET**



**NOTES:**

- 1) MATERIAL: 6061-T6/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AS SHOWN PER QSI 044 6.3 TO A DEPTH  
OF 0.010±0.005 IN THIS LOCATION WITH TOOL TIP  
RADIUS OF 0.015±0.005
- 7) WEIGHT: 0.19 lbs
- 8) REPLACES GENEVA P/N G13013-2

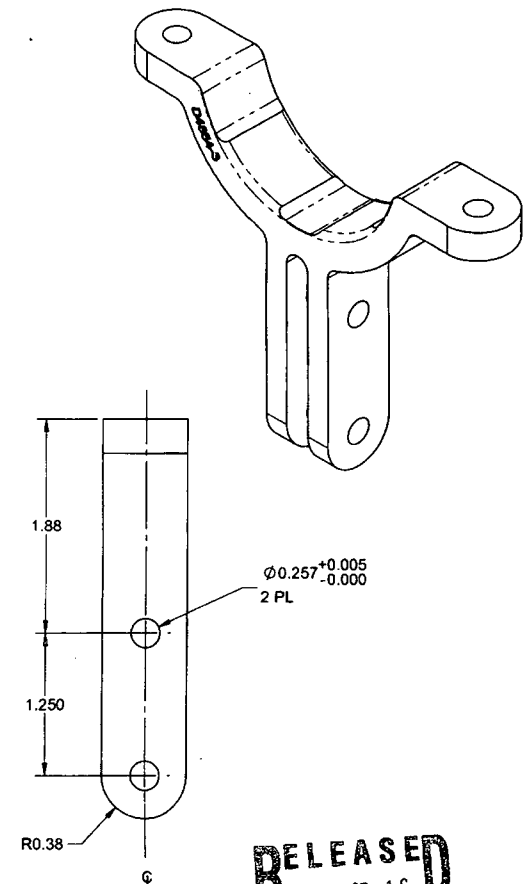
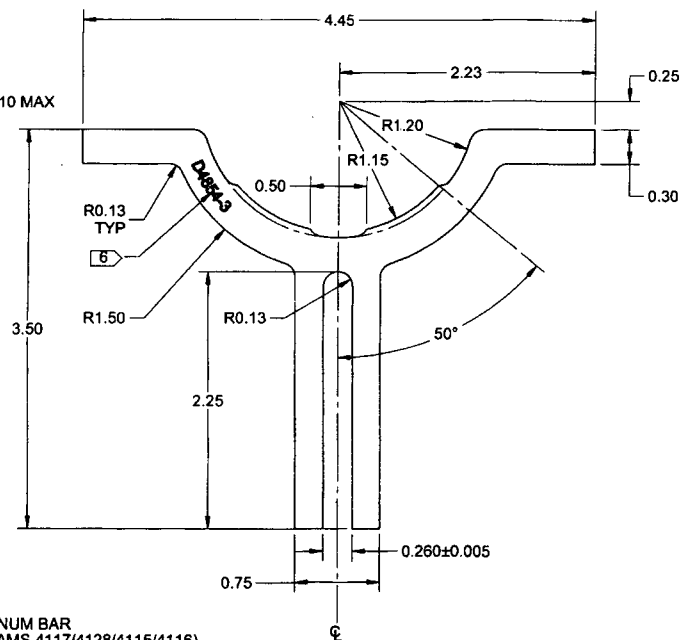
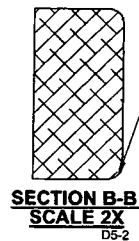
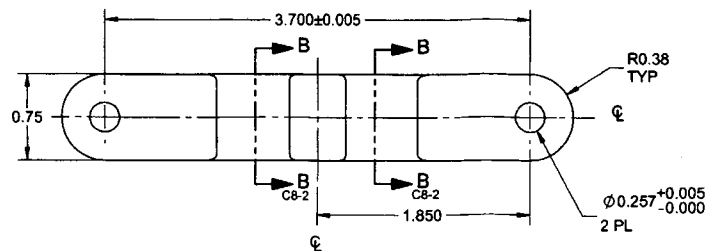
109083M5  
13-11-11  
**RELEASED**  
2013-07-16

| REV.       | NEW ISSUE | DESCRIPTION | BY | DATE |
|------------|-----------|-------------|----|------|
| DESIGN     |           |             |    |      |
| DRAWN      |           |             |    |      |
| CHECKED    |           |             |    |      |
| MFG. APPR. |           |             |    |      |
| APPROVED   |           |             |    |      |
| DE APPR.   |           |             |    |      |
| DATE       | 13.05.15  |             |    |      |

|  |              |
|--|--------------|
| <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA | REV. A       |
| DRAWING NO.<br><b>D4854</b>                              | SHEET 1 OF 4 |
| TITLE<br><b>LOWER BRACKET</b>                            | SCALE<br>NTS |

COPYRIGHT © 2013 BY DART AEROSPACE LTD  
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS  
NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT  
WRITTEN PERMISSION FROM DART AEROSPACE LTD



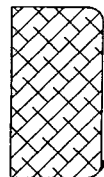
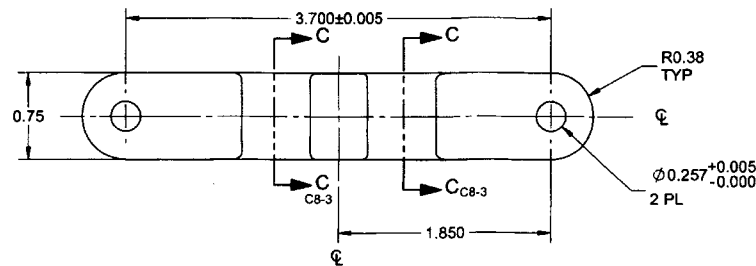
# NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AS SHOWN PER QSI 044 6.3 TO A DEPTH  
OF 0.010±0.005 IN THIS LOCATION WITH TOOL TIP  
RADIUS OF 0.015±0.005
- 7) WEIGHT: 0.19 lbs
- 8) REPLACES GENEVA P/N G13013-6

## **D4854-3 LOWER BRACKET**

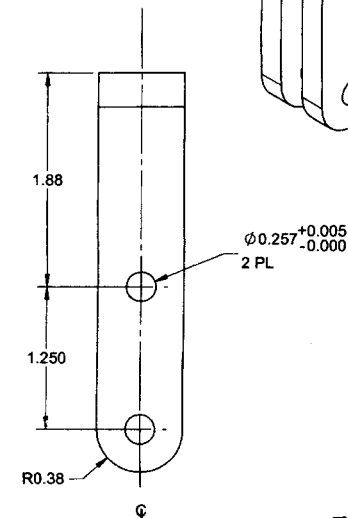
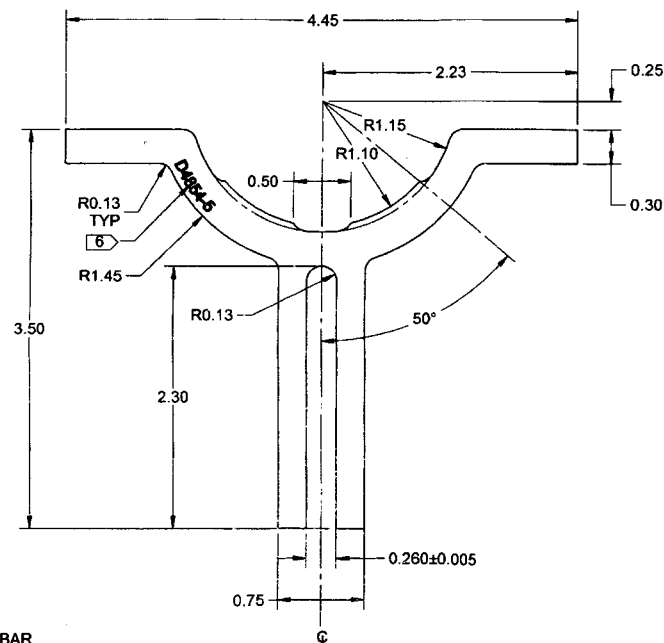
|            |          |   |        |
|------------|----------|---|--------|
| DESIGN     | 08       | <b>DART AEROSPACE LTD</b>   |        |
| DRAWN      | 08       | HAWKESBURY, ONTARIO, CANADA   |        |
| CHECKED    | 08       | DRAWING NO. <b>D4854</b>  | REV. A |
| MFG. APPR. | 21       | SHEET 2 OF 4  |        |
| APPROVED   | 08       | TITLE   | SCALE  |
| DE APPR.   | 08       | <b>LOWER BRACKET</b>  | NTS    |
| DATE       | 13.05.15 | <small>COPYRIGHT © 2013 BY DART AEROSPACE LTD<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br/>NOT TO BE USED FOR ANY PURPOSE, OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br/>WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |        |

**RELEASED**  
2013-07-16



**SECTION C-C**  
**SCALE 2X**  
D5-3

R0.06 MIN - R0.10 MAX  
2 PL



**NOTES:**

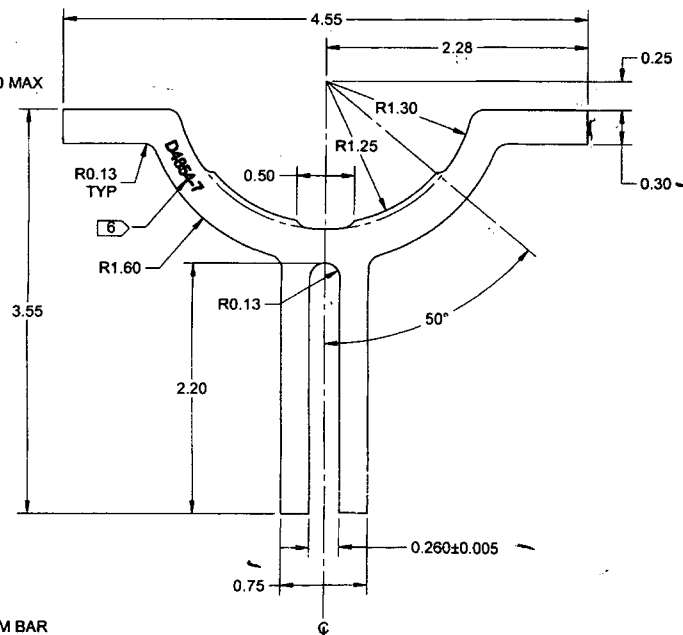
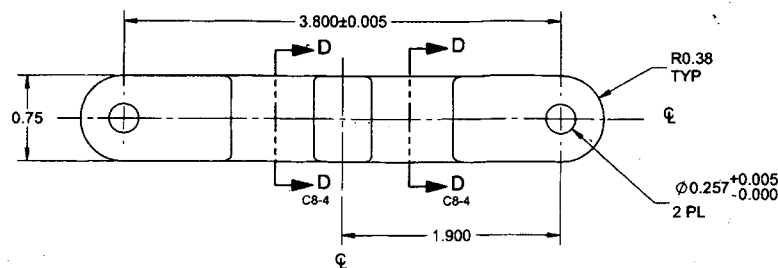
- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AS SHOWN PER QSI 044 6.3 TO A DEPTH  
OF 0.010±0.005 IN THIS LOCATION WITH TOOL TIP  
RADIUS OF 0.015±0.005
- 7) WEIGHT: 0.19 lbs
- 8) REPACES GENEVA P/N G13013-8

**D4854-5 LOWER BRACKET**

**RELEASED**  
2013-07-16

|            |          |   |              |
|------------|----------|---|--------------|
| DESIGN     |          | <b>DART AEROSPACE LTD</b>   |              |
| DRAWN      |          | HAWKESBURY, ONTARIO, CANADA   |              |
| CHECKED    |          | DRAWING NO.   | REV. A       |
| MFG. APPR. |          | <b>D4854</b>  | SHEET 3 OF 4 |
| APPROVED   |          | TITLE   | SCALE        |
| DE APPR.   |          | <b>LOWER BRACKET</b>  | NTS          |
| DATE       | 13.05.15 | <small>COPYRIGHT © 2013 BY DART AEROSPACE LTD<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br/>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br/>WRITTEN PERMISSION FROM DART AEROSPACE LTD</small> |              |



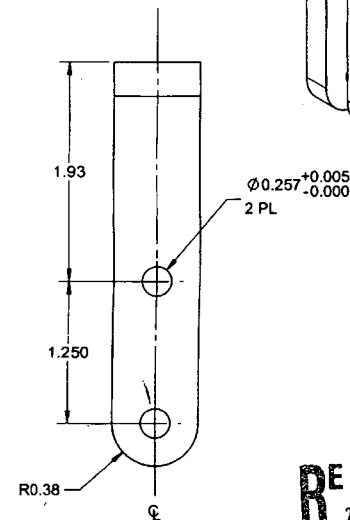
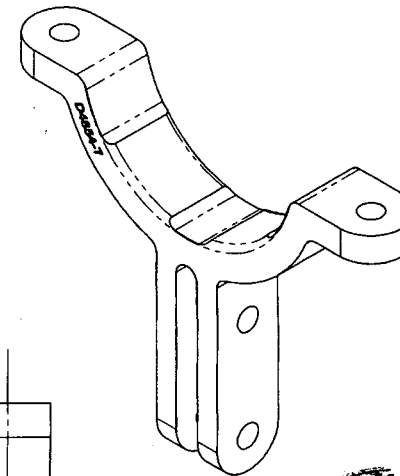


SECTION D-D  
SCALE 2X  
D5-4

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT: "WHITE" (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY AS SHOWN PER QSI 044 6.3 TO A DEPTH  
OF 0.010±0.005 IN THIS LOCATION WITH TOOL TIP  
RADIUS OF 0.015±0.005
- 7) WEIGHT: 0.19 lbs
- 8) REPACES GENEVA P/N G13013-10

**D4854-7 LOWER BRACKET**



RELEASED  
2013-07-16

|            |          |   |              |
|------------|----------|---|--------------|
| DESIGN     | 08       | <b>DART AEROSPACE LTD</b>   |              |
| DRAWN      | 08       | HAWKESBURY, ONTARIO, CANADA   |              |
| CHECKED    | 08       | DRAWING NO.   | REV. A       |
| MFG. APPR. | 21       | <b>D4854</b>  | SHEET 4 OF 4 |
| APPROVED   | 08       | TITLE   | SCALE        |
| DE APPR.   | 08       | <b>LOWER BRACKET</b>  | NTS          |
| DATE       | 13.05.15 | <small>COPYRIGHT © 2013 BY DART AEROSPACE LTD<br/>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br/>NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT<br/>WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |              |





## Marc Bellavance

---

**From:** Harvey Siemens  
**Sent:** Wednesday, January 08, 2014 3:57 PM  
**To:** Marc Bellavance  
**Cc:** Victoria Seib  
**Subject:** D4854

Marc,

Victoria and I discussed the issue that you brought to us regarding the slot sizing resulting from waterjet production. We agree that as long as the part is getting produced on the waterjet we will continue to have these issues. We are good with the resulting size (0.265 on one side and 0.275 on the other). We agree with your assessment that given the weight of the part that it connects to it should not be a problem.

Let me know if you need more info.

Regards,

Harvey